

# Mass Storage

## Optical Systems

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# Mass Storage

## Examples

- ✓ Compact Disk  
(CDs)
- ✓ Digital  
Versatile Disks  
(DVDs)
- ✓ Blu-ray Disks  
(BDs)

# Compact Disk

- ✓ 12 centimeter in diameter
- ✓ Consists of reflective material



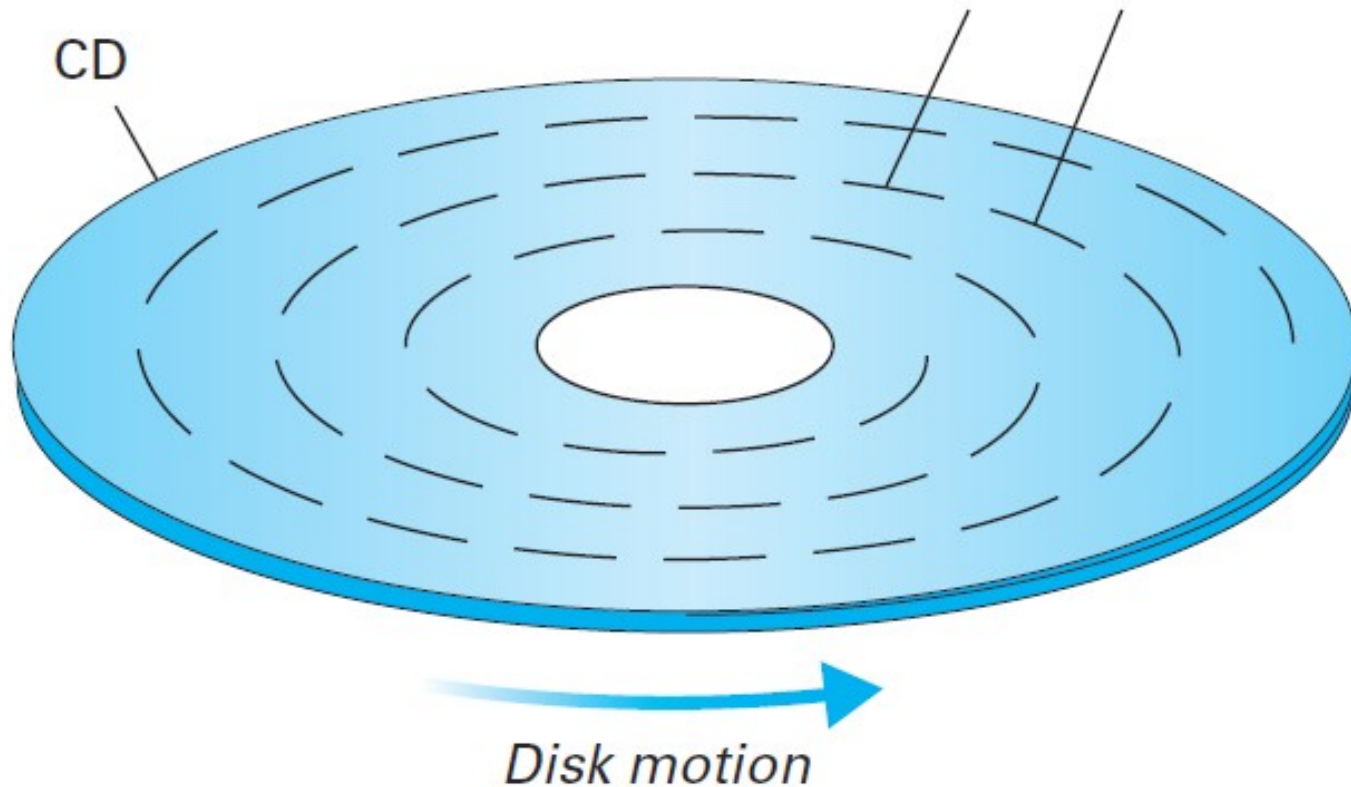
[https://en.wikipedia.org/wiki/Compact\\_disc](https://en.wikipedia.org/wiki/Compact_disc)

# Data Storage on CD

- ✓ Information is recorded on them by creating variations in their reflective surfaces.
- ✓ Data is stored on a single track spiral from inside-outside.
- ✓ Each track is divided into sectors,
- ✓ capacity of a sector is 2KB of data, 1/75 of a second audio music.

# CD

Data recorded on a single track, consisting of individual sectors, that spirals toward the outer edge



# Data Retrieval on CD

- ✓ Retrieval using a Laser that detects the irregularities on the reflective surface of the CD as it spins

# CD Technology

- ✓ Initially applied on audio recording using format CD-DA (compact disk-digital audio)
- ✓ Format is being used even today to store computer data
- ✓ Single Track

# Random Retrieval

As all sectors are not individually accessible in Optical system having one track, therefore, the data retrieval is faster in magnetic systems than optical systems.

Optical System is best suited for long continuous string of data.

# DVDs (Digital Versatile Disks)

CDs capacity is 600 to 700 MB, however, DVD has space in GBs as have multiple semi-transparent layers, which can be viewed by precise focused laser.

# BDs (Blue Ray Disks)

BDs use a blue-violet spectrum of light (instead of red), which is able to focus its laser beam with very fine precision. BDs provide five times capacity than DVDs.

# Summary

## **Optical System**

- ✓ CD, DVD, BDs,
- ✓ Data Storage and Retrieval
- ✓ Continuous access over random access